

Evolution (Biology 3339/5311, Section 001) Spring 2010

Instructor: Dr. Paul Chippindale
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Place and Time: Life Science, Room 122, T/Th 5:30-6:50

Office hours: T/Th 2:30-4:00 or by appointment. You are welcome to drop in at other times (although there's no guarantee that I'll be available, and afternoons are best), but please DO NOT come to see me right before class. I am also available for 30 min. after class. I'm usually pretty quick to respond to email. Otherwise, please phone me or see me (I check my voicemail regularly). I don't respond to email messages that involve simple, factual questions that can be answered by reading the book, but will be happy to help you with any conceptual problems or issues that you present to me clearly.

Prerequisites and information: Biology 1441, Genetics 3315 (or equivalent). You must understand basic genetics to do well in this course. This course does not have a lab component. This is an intensive and challenging course that requires students to think and do independent investigation.

Student Learning Outcome: The goals of this course are to introduce students to the process of evolution, the patterns that result, and the way that evolutionary history has shaped the diversity of Life on Earth; to explore the ways in which evolutionary biologists and medical researchers formulate and test hypotheses; and to investigate current controversies in evolutionary biology.

Textbook: *Evolutionary Analysis*, 3rd edition, by Freeman and Herron, published by Benjamin Cummings. There is a newer edition of the text (very similar), but we're using this one and it should be available very cheaply online. Occasionally I may put additional readings in the Science Learning Center or refer you to websites; if so I will inform you of these in class.

Grading:	Exam I:	25% (15% for graduate students)
	Exam II:	25% (15% for graduate students)
	Final (comprehensive):	50% (30% for graduate students)
	Midterm assignment	10% (required for graduate students only)
	Term paper	20% (required for graduate students only)
	Presentation:	10% (required for graduate students only)

Grades for individual exams WILL NOT be curved. Letter grades will follow this scale: A = 89.5-100%, B = 79.5-89.4%, C = 69.5-79.4%, D = 59.5-69.4%, F = 59.5% or less.

Exams primarily will be multiple-choice and I will notify of the date of each exam at least two weeks in advance. Bring a Scantron and #2 pencil to each exam. I will keep your original exam test paper, on which you must circle all answers and be SURE that they match your Scantron. If there is any question about your Scantron, I will use your answers on the exam paper to resolve

this. **NO CELL PHONES OR OTHER ELECTRONIC DEVICES WILL BE ALLOWED AT EXAMS.** I provide basic calculators at all tests.

Graduate students:

For the midterm assignment, you need to identify an area of evolutionary biology in which there is a current or recent controversy and find two papers from the primary literature (peer-reviewed scientific journals) in which the authors take opposing views. Examples of relevant journals include (but are not limited to): *Evolution*; *Journal of Evolutionary Biology*; *Systematic Biology*; *Molecular Biology and Evolution*; *Molecular Phylogenetics and Evolution*; *Heredity*; *Genetics*; *Journal of Molecular Evolution*; *Nature*; *Science*; *Proceedings of the National Academy of Sciences, USA*; *Proceedings of the Royal Society, London*; and so on. You must receive my approval for the topic and the papers in advance. The papers should be from 2005 or later, unless I say otherwise. Your assignment should consist of a brief review of the area of study and a summary of the viewpoints of the authors. It should be between 1000-1500 words (approximately). I encourage you to discuss your topic with me.

For the term paper, you should expand on this topic (or choose another, subject to my approval), and do a much more comprehensive review of the subject area, based on numerous papers from the literature. I will provide more detailed guidelines later in the semester. Graduate students will also be required to give a 15-20 minute presentation to the class on the subject of their term paper, followed by a question/discussion section that they will lead.

Missed exams/make-up exams: If you miss an exam, you must contact me as soon as possible (within one week of the missed exam) and provide a verifiable, written reason for the absence (e.g. medical emergency). The grade on the final exam will replace the grade on an exam that was missed with a verifiable excuse.

Attendance at class: I do not take attendance, and there is no explicit penalty for missing classes. However, students who attend class regularly almost always perform better on exams than those who do not. Material for the exams is drawn primarily from the lectures, but will not follow the book exactly. I make a point of asking some questions on exams that are based on lectures and not mentioned in the text.

Grade disputes: I will be happy to consider possible errors in grading if you present a clear, concise explanation of the problem. I will NOT consider any grade dispute more than two weeks after return of an exam. For multiple-choice questions, you MUST circle the answers on the test paper (which I keep), as well as filling them in on the Scantron. If there are any questions about the Scantron I use the test paper to verify, and it provides the final decision with no exceptions.

Course Withdrawals: Students may withdraw any time from the beginning of the course to the final drop date (April 2). Up until this time I will give a "W", and any of the academic advisors can sign off for me – you don't need my permission (if you're from another department and your academic advisor says you do, please show them this document and ask them to call our advisors [817-272-2871] for verification). After this time, withdrawal is a complicated process that involves approval from University officials and is not guaranteed or even likely. Incompletes are limited to extreme situations and also involve multiple approvals at higher levels. **Drop dates for graduate students may be different from those for undergraduates.**

Drop for non-payment of tuition: Payment must be received by the term due date of January 18 or your registration will be cancelled. If your registration is cancelled for non-payment, you may reregister for classes but only if seats are available. This is handled by the Bursar's or Registrar's Office and I have no control over it.

Student Support Services: The University supports a variety of student success programs to help you connect with the University and achieve academic success. They include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

Academic Dishonesty: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22).

NOTE: I use all kinds of tricks to avoid cheating and generally can keep ahead of the small minority of students who try this. If you do plan to cheat, you may be very surprised.

Bomb Threats: If anyone is tempted to call in a bomb threat, be aware that UTA will attempt to trace the phone call and prosecute all responsible parties. Every effort will be made to avoid cancellation of presentations/tests caused by bomb threats. Unannounced alternate sites will be available for these classes. Your instructor will make you aware of alternate class sites in the event that your classroom is not available.

Grade Replacement: Students enrolling in a course with the intention of replacing a previous grade earned in the same course must declare their intention to do so at the Registrar's office by Census Date of the semester in which they are enrolled.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week.

NOTE: Graduate students WILL present term projects during this period.

Students with Disabilities: Americans With Disabilities Act (ADA): If you are a student who requires accommodations in compliance with the ADA, please consult with me at the beginning of the semester. As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Your

responsibility is to inform me of the disability at the beginning of the semester and provide me with documentation authorizing the specific accommodation. Student services at UTA include the Office for Students with Disabilities (located in the lower level of the University Center) which is responsible for verifying and implementing accommodations to ensure equal opportunity in all programs and activities.

After hours safety escort:

The Sam Mav Escort service provides a service to assist students, faculty, staff and campus visitors to reach their destinations after regular business hours. The hours of service are 7:00 p.m. to 1:00 a.m., Sunday through Saturday. 817-272-3381

MAVMAIL:

UT Arlington has adopted MavMail (e-mail) as an official means of communication with students. Students are required to check MavMail regularly. Further information regarding your student email account can be found at: <http://www.uta.edu/oit/ema>

Lecture schedule: Biology 3339/5311: Spring 2010

Note: This schedule is intended to be flexible, and represents only a rough guide to the topics that we will cover. It is unlikely that we will be able to get through all the material listed here, and I will adjust coverage and timing according to our progress. I will inform you of dates for all exams and assignments at least two weeks in advance.

Topic(s) by week

Reading in Freeman & Herron

Introduction.

A case for evolutionary thinking:
understanding HIV.

Ch. 1

Understanding HIV (cont'd).
Darwinian evolution.

Ch. 1

Ch. 2

Darwinian evolution (cont'd).
Evidence for evolution.

Ch. 2

Ch. 2

Natural selection.

Ch. 3

Natural selection (cont'd)
Mutation and genetic variation.

Ch. 3

Ch. 4

**TOPIC AND PAPER TITLES DUE FOR
MIDTERM ASSIGNMENT**

Mutation and genetic variation (cont'd).
Mendelian genetics in populations

Ch. 4

Ch. 5

EXAM I

Mendelian genetics in populations (cont'd) Ch. 5-6

Population genetics (cont'd) Ch. 6

Evolution at multiple loci: linkage, sex, and
quantitative genetics. Ch. 7

MIDTERM ASSIGNMENT DUE

Evolution at multiple loci (cont'd). Ch. 7

Studying adaptation Ch. 8

Mechanisms of speciation. Ch. 12

EXAM II

Sexual selection. Ch. 9

Last 2-4 classes: Graduate student presentations, review.

TERM PAPER DUE on last class date (graduate students only)

FINAL EXAM: Tues. 11 May, usual time and classroom.